

JUNE 2005

# REQUEST FOR PERMIT APPLICATION MODIFICATION

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PREPARED FOR:



Pursuant to:  
Iatan 2 Coal-Fired Generation Facility  
Individual Section 404 Permit Application (USACE File No. 200200121)

Prepared by:

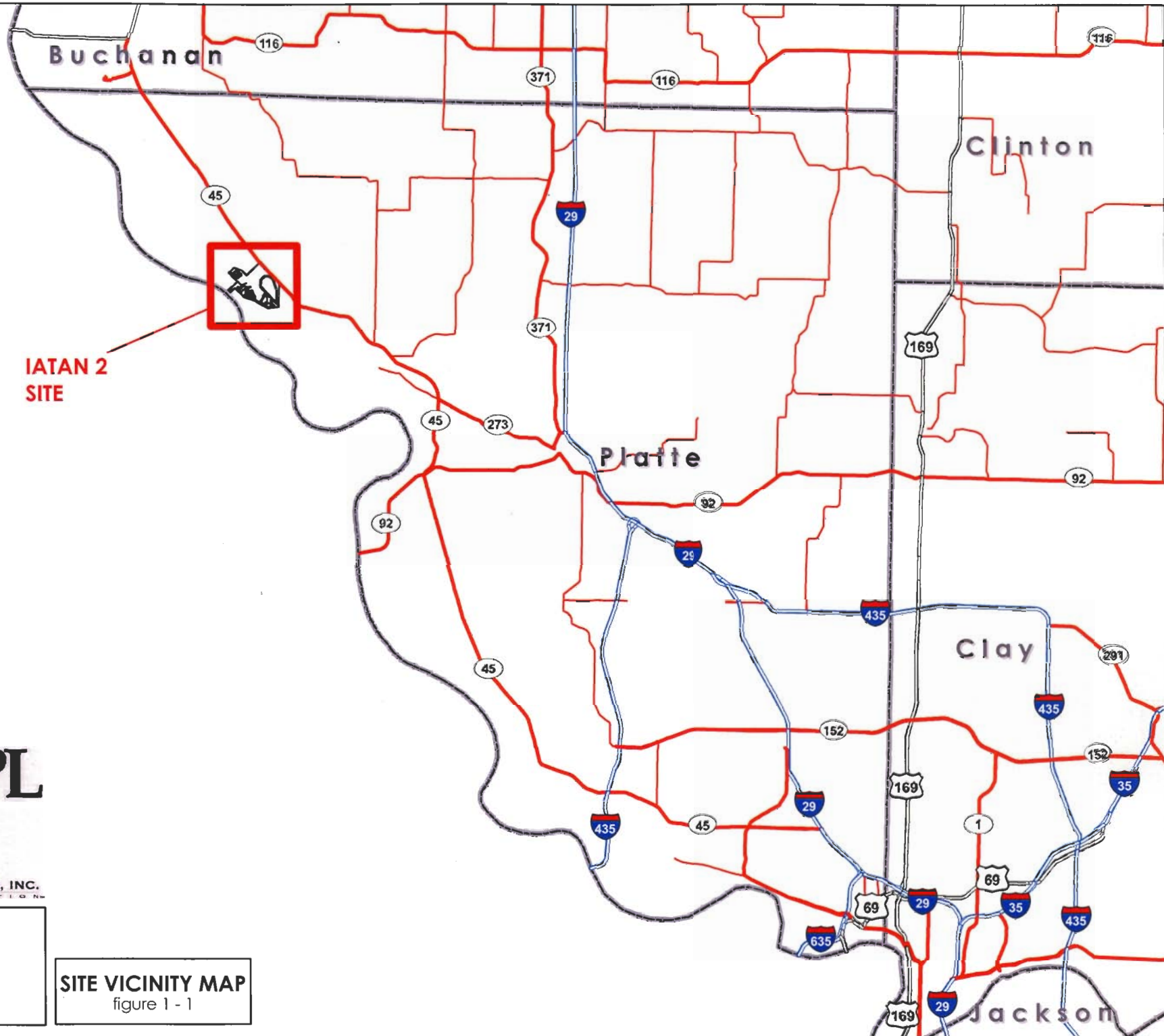


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## **1.0 Introduction**

Kansas City Power & Light (KCPL) proposes to construct an approximately 800 MW pulverized coal-fired electric generation facility (Iatan 2). Iatan 2 is adjacent to the Missouri River, about 5 miles northwest of Weston and 2 miles south of Iatan, Missouri (Figure 1-1). The project is located immediately adjacent to an existing coal-fired generation unit at the Iatan Generation Station ("Iatan Unit 1"- Figure 1-2). Construction of the project is expected to begin in 2006, with commercial operation anticipated by 2010. KCPL plans to operate the project as a base-load facility. The project is expected to operate 24 hours a day. (Burns and McDonnell, 2005).

KCPL's, parent, Great Plains Energy, previously completed a wetland delineation and Section 404 Individual Permit Application for a similar project area (URS, 2003a & b). For the current Iatan 2 project, KCPL has revised the facility site plan. KCPL submitted a revised Environmental Report (Burns & McDonnell, 2005) and Preliminary Jurisdictional Determination (Adaptive Ecosystems, Inc, 2005). The following request for modification of permit application No. 200200121 includes a description of project impacts, avoidance/minimization, mitigation and a project schedule.



**KCPL**



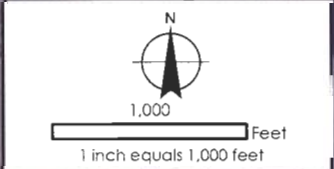
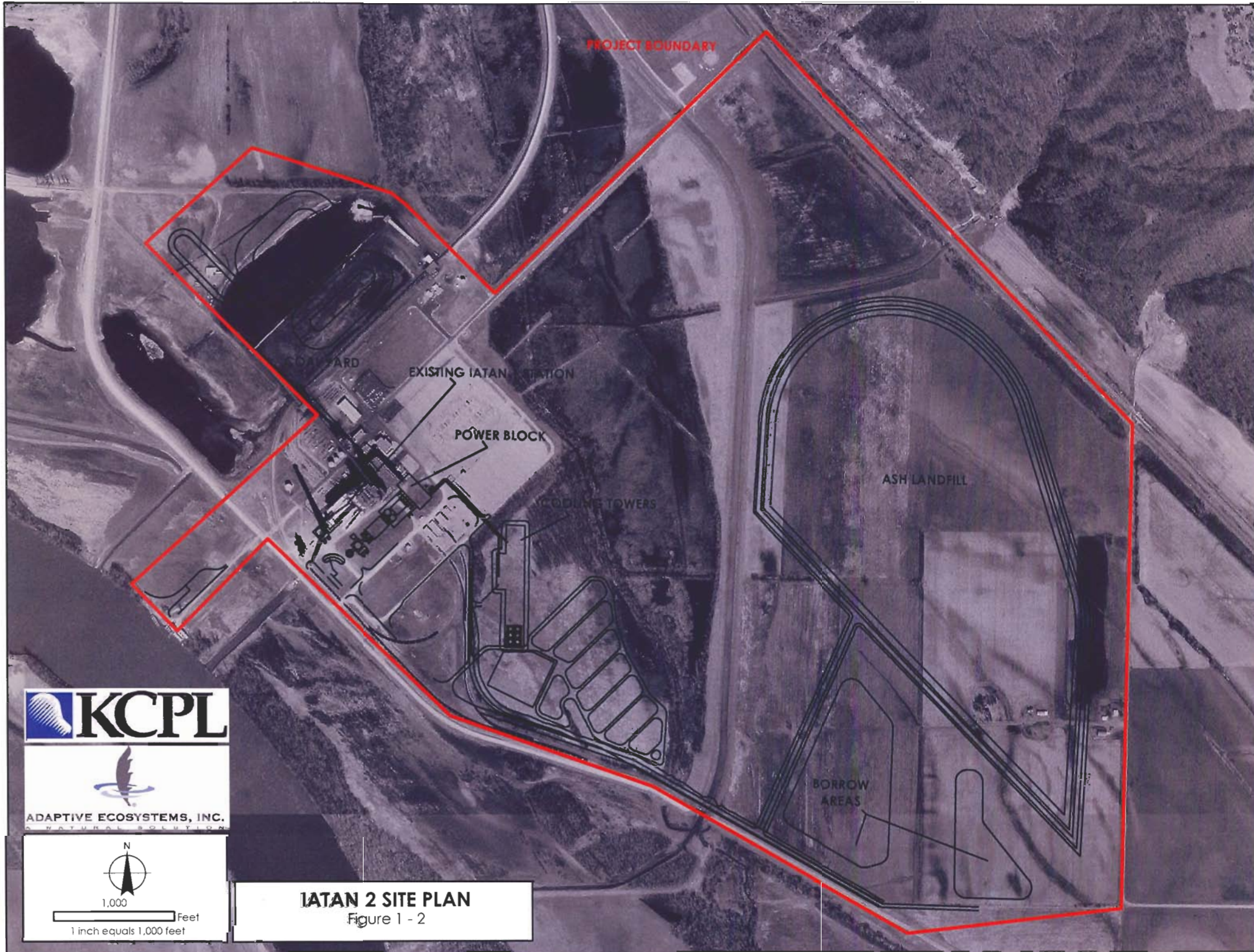
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1 Miles  
1 inch equals 4 miles

**SITE VICINITY MAP**  
figure 1 - 1





# IATAN 2 SITE PLAN

Figure 1 - 2



## **2.0 Summary of Impacts**

Adaptive Ecosystems, Inc. completed a comprehensive wetland determination for the revised site plan (Adaptive Ecosystems, Inc., 2005). A total of 152.45 acres of jurisdictional wetlands and 6.94 acres of riparian forested were identified within project boundaries including: 6,041 linear feet (3.47-acre) of perennial tributary (Mission Creek), 24.83 acres of farmed wetlands, 12.17 acres of scrub-shrub wetlands, 8.98 acres of forested wetlands, 6.94 acres of riparian forested, and a 103-acre wetland complex (see Table 2-1; Figure 2-1).

**Table 2-1: Total Wetlands and Net Impacts**

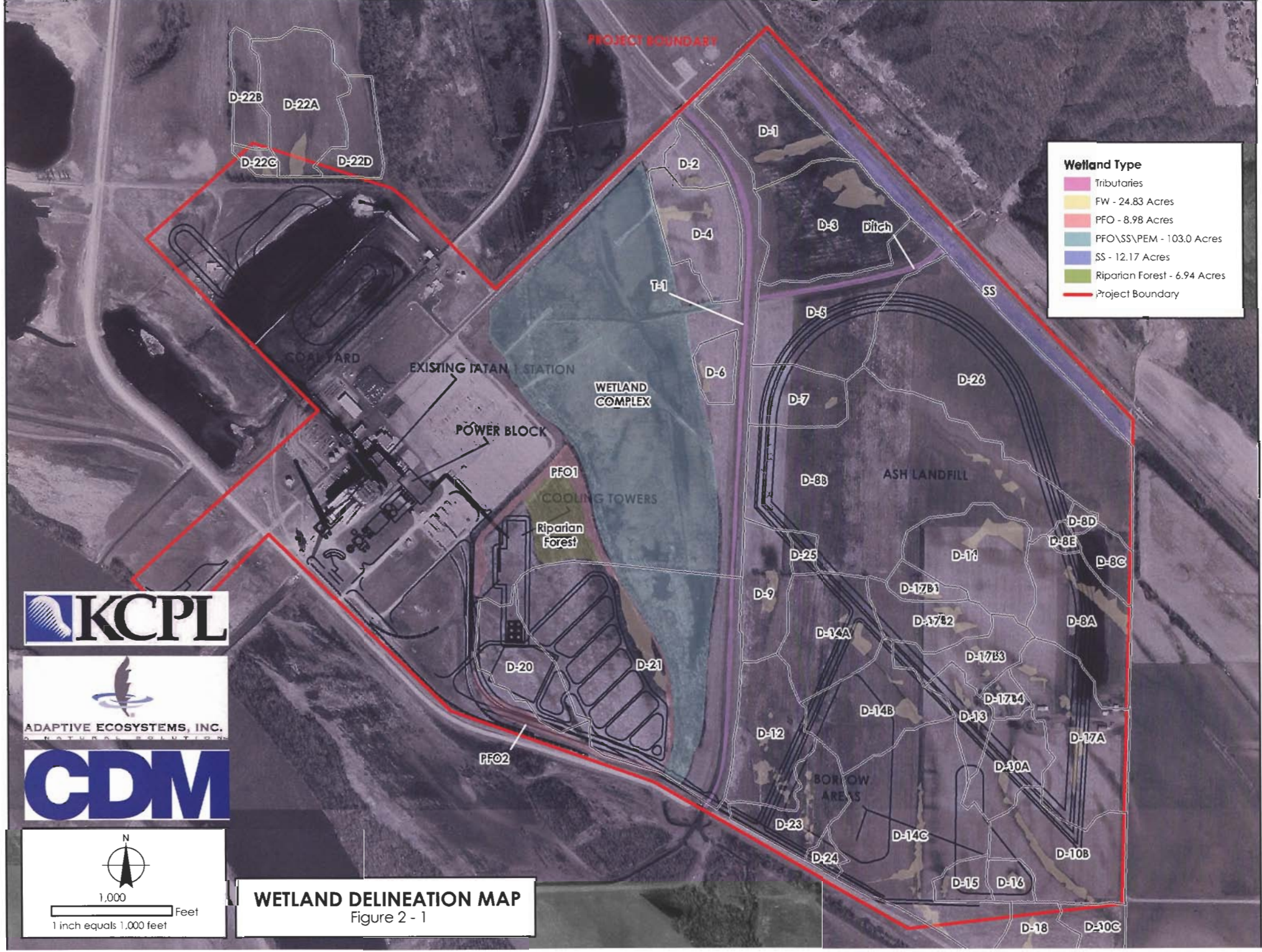
<b>Wetland ID</b>	<b>Wetland Type</b>	<b>Area (Acres)</b>	<b>Impact (Acres)</b>
Wetland Complex	PEM, SS, PFO	103	0
PFO-1	Palustrine Forested	5.86	1.5
PFO-2	Palustrine Forested	3.12	3.12
SS	Roadside Scrub-shrub drainage	12.17	0
T-1	6,041 linear foot Perennial Tributary	3.47	0
D-1	Farmed Wetland	1.69	0
D-2	Farmed Wetland	0.14	0
D-3	Farmed Wetland	2.11	0
D-4	Farmed Wetland	0.88	0
D-5 (T-2)	1,633 linear foot Non-jurisdictional Ditch	0.0	0
D-6	Farmed Wetland	0.24	0
D-7	Farmed Wetland	0.81	0.81
D-8a	Farmed Wetland	1.52	1.52
D-8b	Farmed Wetland	1.8	1.8
D-9	Farmed Wetland	0.65	0
D-10a	Farmed Wetland	0.45	0.45
D-10b	Farmed Wetland	1.31	1.31
D-10c	Farmed Wetland	0.69	0
D-11	Farmed Wetland	1.48	1.48
D-12	Farmed Wetland	1.03	1.03
D-13	Farmed Wetland	0.33	0.33
D-14b	Farmed Wetland	0.71	0.71
D-14c	Farmed Wetland	1.85	1.85
D-15	Farmed Wetland	0.17	0.17
D-17a	Farmed Wetland	1.38	1.38
D-17b	Farmed Wetland	1.15	1.15
D-18	Farmed Wetland	0.41	0
D-20	Farmed Wetland	0.12	0.12
D-21	Farmed Wetland	2.39	0
D-22a	Farmed Wetland	0.83	0
D-22c	Farmed Wetland	0.13	0.13
D-23	Farmed Wetland	0.48	0.48
D-24	Farmed Wetland	0.08	0.08
Riparian Forested	Riparian Forested	6.94	0
<b>Totals</b>		<b>159.39</b>	<b>19.42</b>

For the Iatan 2 current site plans, a total of approximately 19.42 acres of wetlands would be impacted including; 4.62 acres of forested wetlands and 14.8 acres of farmed wetlands as summarized in Table 2-2.

**Table 2-2: Iatan 2 Project Impacts**

<b>Resource Type</b>	<b>Total Acres</b>	<b>Acres Impacted</b>
<b>Wetland Complex</b>	103	0
<b>Scrub-shrub Wetlands</b>	12.17	0
<b>Jurisdictional Tributaries</b>	3.47	0
<b>Palustrine Forested</b>	8.98	4.62
<b>Farmed Wetland</b>	24.83	14.8
<b>Riparian Forested</b>	6.94	0
<b>Totals</b>	<b>159.39</b>	<b>19.42</b>





**Wetland Type**

- Tributaries
- FW - 24.83 Acres
- PFO - 8.98 Acres
- PFO/SS/PEM - 103.0 Acres
- SS - 12.17 Acres
- Riparian Forest - 6.94 Acres
- Project Boundary

**KCPL**

**ADAPTIVE ECOSYSTEMS, INC.**  
NATURAL RESOURCE SOLUTIONS

**CDM**

N  
1,000  
Feet  
1 inch equals 1,000 feet

**WETLAND DELINEATION MAP**  
Figure 2 - 1



### ***3.0 Avoidance, Minimization and Mitigation***

The following is a brief discussion of avoidance, minimization and mitigation for the Iatan 2 facility.

#### **3.1 Avoidance**

KCPL's parent, Great Plains Energy, previously submitted a Section 404 Application for a similar project area (URS, 2003a & b). The study included the identification of 91.29 acres of jurisdictional wetlands. The previous facility design included the avoidance of 47.51 acres of the wetlands identified. Approximately 43.78 acres (48%) of wetlands would have been impacted.

KCPL continued to refine the project design which included revisions to the facility layout and project boundary. Primary consideration was given to functioning wetland systems such as the forested wetlands. The current project, Iatan 2, includes a total of 152.45 acres of jurisdictional wetlands and 6.94 acres of riparian forested were identified within the project boundary. The new facility layout will avoid 140 acres (92%) of wetlands and cause unavoidable impact to 19.42 acres (Table 2-2). Avoidance measures will result in a substantial decrease in wetland acres impacted during implementation of the new facility. Approximately 50% of the forested wetlands, 40% of farmed wetlands, 100% of scrub-shrub wetlands and 100% of emergent wetlands were avoided.

#### **3.2 Minimization**

Wetland restoration/enhancement and stormwater treatment will be the major focus for minimization efforts. Minimization measures for the Iatan 2 Facility will include:

- Stormwater management design to filter runoff through vegetated swales to the extent possible;
- The installation of buffers (13.7 acres) and filter strips between the operating facility and existing wetlands (Figure 3-1); and
- Discharge of filtered stormwater to wetland depressions within the developed project (6.6 acres; D-9; D-14b, c; D-10B, D-21).

Installation of filter strips, buffers and wetland restoration/enhancement measures will be completed during project construction. Minimization measures will not be considered mitigation. These areas near the Iatan 2 operations will not be restricted by deeds or covenants.



### 3.3 Mitigation

KCPL considered a number of mitigation alternatives in the planning of the project (Adaptive Ecosystems, 2004). Mitigation will be completed in an existing wetland complex on KCPL property (See Figure 3-2).

#### 3.3.1 Iatan 2 Mitigation Area

The mitigation site is a approximately 68-acre area within a 103-acre wetland complex. The area is currently dominated by old field vegetation, scrub-shrub areas and forested riparian areas. Soils are silt loams with hydric soil indicators. The primary source of hydrology is groundwater. Site hydrology is evident when Missouri River levels are high. In years of lower than normal precipitation, the area remains dry with the exception of minor surface runoff. A flap gate at the southern end of the site (750.59 ft. above mean sea level (m.s.l)) and the entrance road culvert (752.19 ft. m.s.l.) control groundwater inundation levels. Mission Creek is adjacent the site but isolated. The channel of Mission Creek (753 ft. m.s.l.) is about 1.0 ft. above the wetland bottom.

The site has reverted to an old field condition over the last several years as groundwater influence has been limited. Dominant vegetation in the wetland includes pokeweed (*Phytolacca americana*), pigweed (*Amaranthus rudis*), maretail (*Conyza canadensis*), smartweed species (*Polygonum sp.*), river bulrush (*Scirpus fluviatilis*) and stinging nettle (*Urtica dioica*).

The mitigation concept includes the reintroduction of surface water from Mission Creek to the wetland. Surface water from Mission Creek would allow for annual seasonal wetland hydrology. The area would be restored to a viable complex of emergent wetlands, scrub-shrub wetlands, forested wetlands, and open water/floating aquatic habitat. Existing forested riparian and scrub-shrub areas would be preserved. The Iatan 2 Mitigation area is 68.22 acres and would yield a total mitigation credit of 36.55 acres. Mitigation measures for the Iatan 2 facility will include preservation, enhancement, restoration and creation (Table 3-2) and defined below.

**Table 3-1: Iatan 2 Mitigation Area: Ecotypes and Credits**

Mitigation Ecotype	Existing Habitat	Mitigation Measure	Credit/acre	Acres Mitigated	Credit (acres)
Emergent Wetland (PEM)	Old Field	Enhancement	0.50/acre	25.32	12.5
Emergent Wetland (PEM)	Old Field	Restoration	1.0/acre	5.86	5.9
Scrub-Shrub (PSS)	Scrub-Shrub	Preservation	0.25/acre	1.05	0.25
Scrub-Shrub (PSS)	Old Field	Restoration	1.0/acre	5.08	5.0
Forested Wetland (PFO)	Old Field	Restoration	1.0/acre	5.1	5.1
Riparian Forested (RF)0	Riparian Forest	Preservation	0.25/acre	24.02	6.0
Open Water	Old Field	Creation	1.0/acre	1.79	1.80
<b>Totals</b>				<b>68.22</b>	<b>36.55</b>

Preservation:

Preservation is defined as permanent restriction of deeds and covenants filed for existing, functioning ecotypes such as riparian forests and scrub-shrub areas. These areas occur within the footprint of the mitigation area and provide ecological benefit and diversity of habitat. For no net loss calculations, preservation will result in a credit of 0.25 acres for every 1.0-acre preserved (4.0 acres preserved to 1.0-acre mitigation credit).

Enhancement

Enhancement will include the introduction of surface water to hydric soils within the mitigation area. This surface water will augment groundwater and result in the establishment of wetland conditions. The additional surface water will also preclude weedy annuals that colonize the site in years of below normal rainfall, in years where groundwater is at lower levels and in late season months where groundwater is at lower levels. Enhanced areas will be allowed to revegetate to species adapted to the modified hydrologic regime. For no net loss calculations, enhancement will result in a credit of 0.50 acres for every 1.0-acre preserved (2.0 acres enhanced to 1.0 acre mitigation credit).

Restoration:

Restoration will include the introduction of surface water to hydric soils within the mitigation area and the introduction of native vegetation to restore specific ecotypes (forested wetlands, emergent wetland, scrub-shrub wetlands). This surface water will augment groundwater and result in the establishment of wetland conditions. The additional surface water will also preclude weedy annuals that colonize the site in years of below normal rainfall, in years where groundwater is at lower levels and in late season months where groundwater is at lower levels. Enhanced areas will be allowed to revegetate to species adapted to the modified hydrologic regime. For no net loss calculations, restoration will result in a credit of 1.0-acre for every 1.0-acre preserved (1.0 acres restored to 1.0-acre mitigation credit).

Creation

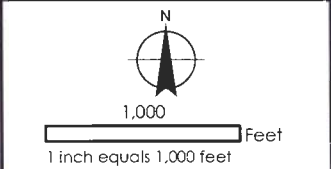
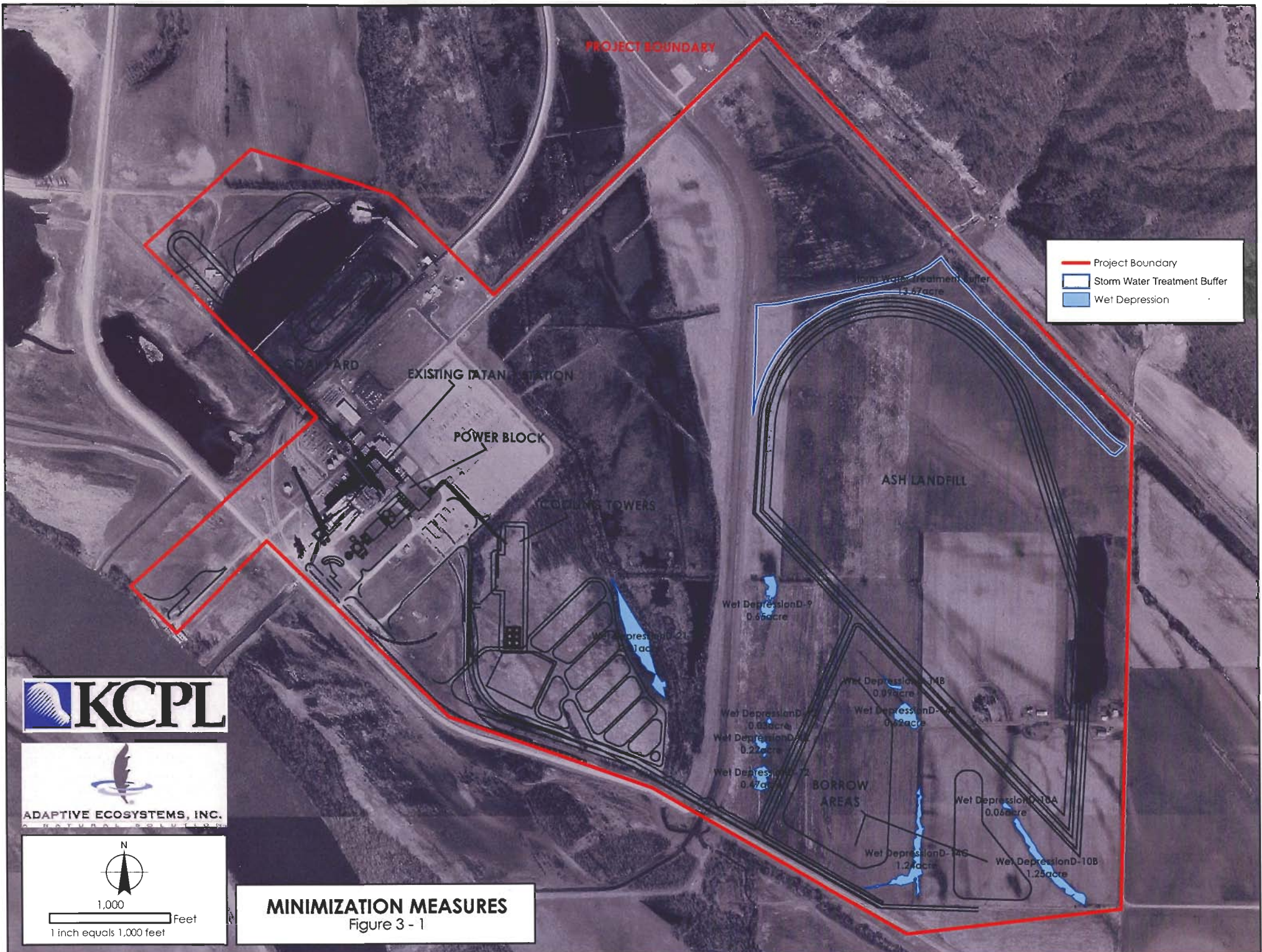
Creation will include the excavation of small open water areas. Typically, for mitigation areas, open water is given less credit in wetland systems. For the purpose of the Iatan 2 Mitigation Area, small open water areas will add a complementary ecotype in the context of a larger restoration effort. For no net loss calculations, creation will result in a credit of 1.0-acre for every 1.0-acre created (1.0 acres created to 1.0-acre mitigation credit).

**3.3.2 No Net Loss Calculations**

For the purpose of “no net loss”, KCPL proposes to mitigate for 14.8 acres of farmed wetlands and 4.62 acres of forested wetlands by restoring, enhancing, preserving and creating a mosaic of ecotypes on the 68.22-acre Iatan 2 Mitigation area. The preliminary concept includes 25.07 acres of preservation, 1.79 acres of creation, 25.32 acres of enhancement, and 16.04 acres of restoration (See table 3-1). The acreage and distribution of ecotypes will be determined after baseline vegetation, soils and hydrology studies are completed. A final mitigation plan will be submitted after baseline studies are completed.

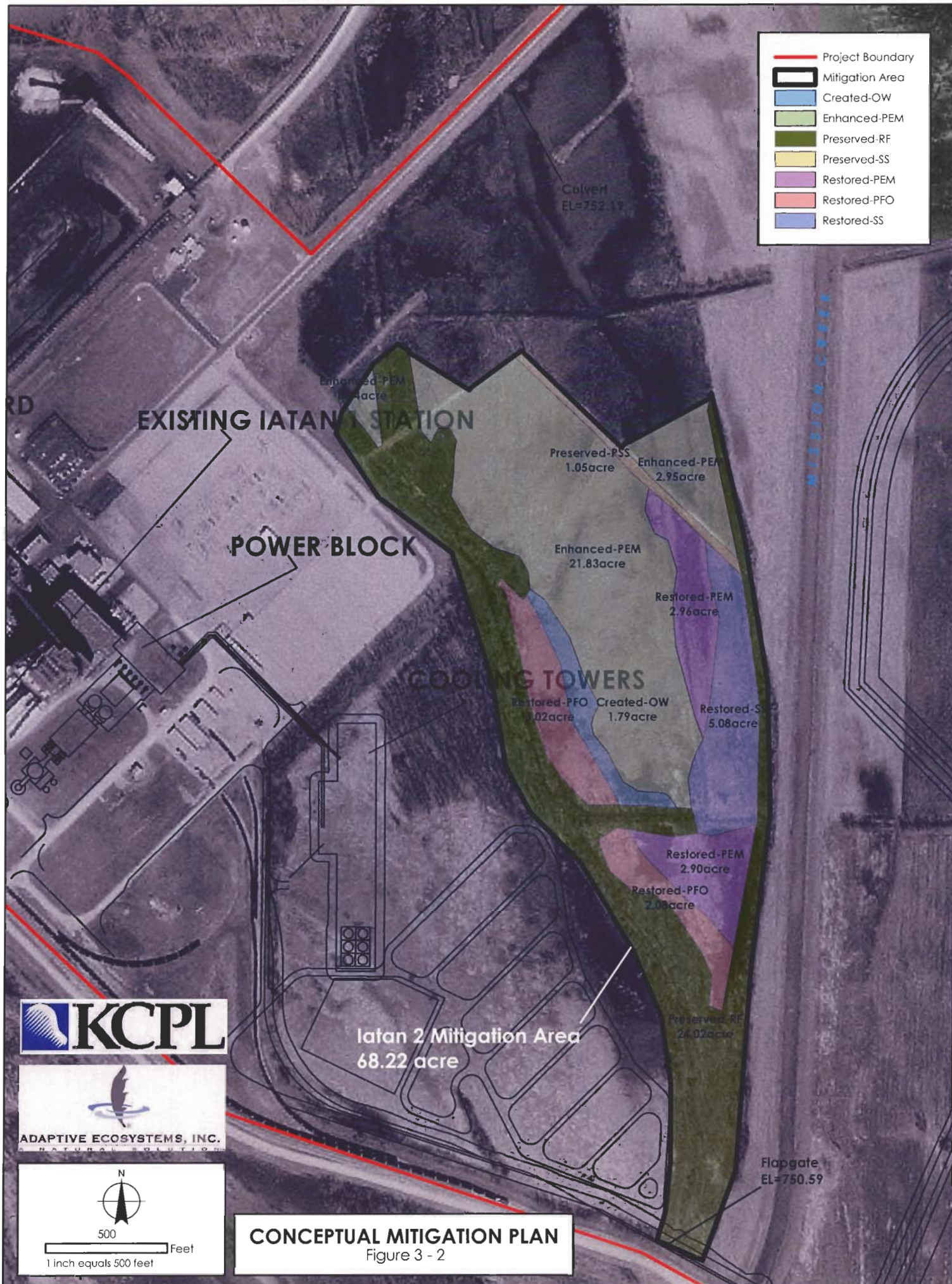


Iatan 2 impacts will be mitigated 3.5 to 1 (68.22 acres mitigated to 19.42 impacted) on a total acreage basis. Iatan 2 impacts will be mitigated at a 1.9 to 1.0 ratio considering impact to mitigation credit (Table 3-1; Figure 3-2).



**MINIMIZATION MEASURES**  
Figure 3 - 1





**CONCEPTUAL MITIGATION PLAN**  
Figure 3 - 2